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[54] MONOCLONAL ANTIBODY SPECIFIC FOR PROTEIN C AND ANTIBODY PURIFICATION METHOD

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[58] Field of Search 530/388.25, 413; 435/240.27, 172.2, 70.21

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[57] ABSTRACT

A Ca^{2+} dependent monoclonal antibody that specifically binds to a specific twelve peptide sequence (E D Q V D P R L I D G K) in the activation region of the Protein C. The antibody does not bind to Activated Protein C and can be used to inhibit activation of Protein C by thrombin-thrombomodulin. The antibody can be isolated from cell culture or ascites fluid in large quantities by affinity chromatography with mild conditions using the peptide bound to an immobilized substrate. The antibody has a number of specific uses in isolation and characterization of Protein C and as a model for the design of Ca^{2+} dependent antibodies for the isolation of other proteins, as a diagnostic, and as a therapeutic to prevent activation of Protein C. The Protein C can be naturally produced or produced by expression of the recombinant gene. Advantages of the antibody in purification of Protein C include the specificity for Protein C and not Activated Protein C, and the unique Ca^{2+}-peptide binding specificity which allows the binding site to be protected when it is being immobilized on the chromatographic support. In vivo, the antibody has been demonstrated to inhibit tumor growth. The antibody can also be used to promote clotting in patients having high levels of Factor VIII inhibitors.

5 Claims, 2 Drawing Sheets